



## **MISSOURI RIVER – JUDITH DRAINAGE**

### **PHYSICAL DESCRIPTION**

The reach of the Missouri River from Great Falls to the mouth of the Marias River is 54 miles in length. Stream gradient averages 4.8 feet/mile and varies from 18.7 feet/mile at the mouth of Belt Creek to 2.2 feet/mile near the mouth of the Marias River. The principal tributaries entering this reach are Belt, Highwood and Shonkin creeks. Belt Creek contributes a noticeable flow to the Missouri only during the spring runoff period. Belt Creek is presented in a separate section.

The Missouri River from the confluence of the Marias River to the confluence of the Judith River is 67 miles in length. The stream gradient averages 2.1 feet/mile and varies from 3.0 feet/mile near the mouth of Arrow Creek to 1.5 feet/mile at Coal Banks Landing. The Marias River is the only tributary stream in this reach which contributes a noticeable flow to the Missouri. It is discussed in its own section.

The reach of the Missouri River from the confluence of the Judith River to Fort Peck Reservoir is variable due to water elevations in the reservoir, but approximately 85 miles in length. Stream gradient averages 1.9 feet/mile and varies from 3.2 feet/mile near Stafford Ferry to less than 1 foot/mile as the river enters the reservoir. The Judith River is the only tributary stream in this reach that contributes a noticeable flow to the Missouri.

The Judith River is the third largest tributary to the Missouri River in the reach between Canyon Ferry and Fort Peck dams. This stream drains an estimated 2,000 square miles of the Little Belt, Big Snowy, Judith and the North and South Moccasin mountains and surrounding lands of central Montana. The Judith flows northward for 129 miles to its confluence with the Missouri River about 50 air miles north of Lewistown. Major tributaries include the Middle, South and Ross Forks, Big Spring and Warm Spring creeks, and Wolf Creek. Many of the tributary streams go subsurface near the foothills into the limestone geology and emerge downstream. Big Springs Creek and Warm Springs are primarily spring-fed creeks, while Cottonwood Creek, the South Fork Judith River, and the headwaters of Wolf Creek have long reaches that are dry in at least late summer.

The upper Judith River is situated in the mountainous area of the Lewis and Clark National Forest with its tributaries originating at an elevation of about 8,000 feet. The river begins at the confluence of the Middle and South forks and flows within a broad valley through prairie foothills and bench lands. The riparian vegetation, for about half its length consists of dense willow and other shrubs adjacent to hay meadows. Below this, cottonwoods begin to dominate the overstory along with an undergrowth of willows and rose. The average stream gradient is 30 feet/mile. Channel substrate is composed mostly of cobbles and gravel with moderate amounts of siltation.

The lower Judith River, from Big Spring Creek to the confluence with the Missouri River (elevation of 2,430 feet) is a prairie stream receiving run-off from adjacent lowlands and surrounding isolated mountain ranges. It follows a narrow river valley through prairie bench lands and rugged breaks. The river valley averages about one-half mile wide and becomes progressively more deeply entrenched in a downstream direction. Riparian vegetation consists of

deciduous woodland dominated by an overstory of cottonwoods with a dense shrubby undergrowth of willows, rose and snowberry. The average stream gradient was 12 feet/mile in 2010, but historic flooding in 2011 has shortened stream length with numerous channel avulsions and increased gradient below Ross Fork Creek. Channel substrate is mostly composed of cobbles and gravel with increasing amounts of siltation downstream.

Land uses in the Judith River drainage are fairly diverse. Basin wide, timber harvest on forest lands has been moderate; however, the South Fork of the Judith has been intensively logged. Agricultural uses occur throughout the drainage. Livestock grazing is moderate on the public forest lands of the upper basin and is a major agricultural practice in the lower basin. Nearly all of the land is privately owned and managed for cattle ranching and farming. Hay and some crop lands exist along the river and are more extensive in the upstream areas. Irrigation is also more intensive here, resulting in severe dewatering of the Judith River for several miles. An offstream storage reservoir, Ackley Lake, located along the upper section of the Judith, stores 6,140 acre-feet and provides irrigation to 1,621 acres. Mining activities in the basin date back to the late 1800s. Gold was the primary mineral sought in the Yogo area of the Little Belt Mountains, however, sapphire mining also proved to be commercially successful. Gold mining was also pursued in the North Moccasin and Judith mountains. Presently, only a minimal amount of mining is ongoing in the Judith River Basin. Water quality issues have developed at a former open-pit gold mine that operated in the North Moccasin Mountains at Kendall. The area where sapphire mining produced commercial quantities near Yogo Creek is an area also popular with recreational placer miners.

Arrow Creek originates in the Little Belt and Highwood mountain ranges and drains portions of Judith Basin, Fergus, and Chouteau counties. The Arrow Creek watershed, occupying approximately 1,224 square miles, lies west of the Judith River drainage and Arrow Creek flows northward into the Missouri River. Major tributaries include Flat Creek, Lone Tree Creek, and Cottonwood Creek. Agricultural uses occur throughout the drainage and most lands are managed for cattle ranching and farming. In the northern part of the drainage, the creek flows through badlands on its way to the Missouri River. Arrow Creek has a fairly natural hydrograph and may be dewatered in late summer and early fall during dry years. The Arrow Creek drainage is more arid than the Judith basin, with the headwaters holding less snow for a shorter period of time. Double peaked hydrographs can result from prairie snow melting in March and summer thunderstorms causing short-duration, high-intensity discharges. Arrow Creek's channel is very sinuous. Much of the bottomland is privately owned, although DNRC trust lands and BLM-managed lands compose a greater percentage than in the Judith River Basin.

Arrow Creek flows through a wide valley bottom of Quaternary alluvium and these deposits of modern day channels are set within a canyon of sedimentary layers. The wide alluvial valley and floodplain surround a C-channel type, which characterizes most of lower Arrow Creek, being low in gradient, meandering, and with point-bars and riffle/pool morphology. The cottonwood forest on Arrow Creek is dominated by plains cottonwood. Other riparian tree and shrub species include peach-leaf willow, yellow willow, and sandbar willow. Although present, Russian olives are not found in high densities.

## FISHERIES MANAGEMENT

The middle Missouri River supports a diverse warmwater fishery. All of the native fish species that historically occurred here are still found in this reach because of the relatively unaltered state of the river. There are substantial angling opportunities for sauger, walleye, channel catfish, shovelnose sturgeon, smallmouth bass, freshwater drum, burbot and a wide variety of nongame species. The FWP fisheries objective for the middle Missouri River is to emphasize native species management.

The reach of the Missouri River below Morony Dam includes a transition zone between coldwater and warmwater fisheries. The Highwood and Shonkin creek drainages support trout fisheries. Shonkin Creek also has a robust prairie fish assemblage. Thirteen species, including smallmouth bass, were sampled near the mouth in 2004. Sauger have been historically the most abundant game fish found throughout this reach of the Missouri that extends down to the Marias; numbers appear to have declined in recent years. The coldwater game fish include brown and rainbow trout and mountain whitefish. These species are fairly common only in the upper 15 miles. Other cool/warmwater fish found in this reach include burbot, smallmouth bass, channel catfish, shovelnose sturgeon, northern pike, freshwater drum, blue sucker, and goldeye. Forage fish studies on the Missouri River indicate side channels are important habitat areas displaying higher fish diversity and abundance compared to open river areas. Side channel areas are also important rearing areas for goldeye, smallmouth buffalo and bigmouth buffalo. Young-of-the-year and forage fish are thought to use the side channel areas from early June through the end of August; flows of 4,500 cfs are required to keep side channels functional in this reach. Prior research also determined that paddlefish residing in Fort Peck Reservoir and the lower middle Missouri River require a flow of 14,000 cfs at Virgelle to initiate spring migrations to upstream spawning sites. Based on calculations made from USGS data gathered at the Virgelle and Fort Benton gaging stations, it was determined the Missouri River at Fort Benton contributes 80.6% of the median flow of the Missouri River at Virgelle. Therefore, to maintain the annual spring paddlefish migration in downstream reaches, it is recommended that the Missouri River discharge at Fort Benton be maintained at 80.6% of 14,000 cfs, or 11,284 cfs, during the spawning period, which was estimated to be from May 19 to July 5 annually.

Below the mouth of the Marias, the shovelnose sturgeon are amongst the largest found anywhere within the geographical range of the species. Paddlefish, a Species of Concern, inhabit the reach between the Marias and the mouth of the Judith River only during its spawning season. For most of their lives, paddlefish are found in Fort Peck Reservoir. When the Missouri rises to a flow greater than 12,000 cfs during the spring, paddlefish are triggered to leave the reservoir and migrate upstream to spawn. Females make this migration every 2-3 years and males every 1-2 years. Paddlefish have been observed as far upstream as the mouth of the Marias River when flows are extremely high. Previous research identified four spawning areas between the Marias and the Judith. Paddlefish receive light fishing pressure in the reach because of limited access and lack of paddlefish concentrations. Twenty-two non-game species have been found in this reach of the Missouri. Blue sucker, smallmouth buffalo, bigmouth buffalo and freshwater drum are four nongame migratory species that are dependent on high spring flows for successful reproduction that inhabit this reach. In addition to the paddlefish, the endangered pallid sturgeon, the threatened shovelnose sturgeon, as well as sturgeon chub and blue sucker (Species of

Concern), use this reach. Pallid sturgeon numbers have increased in this reach as a result of ongoing recovery work.

The third reach of the middle Missouri, from the Judith River to Fort Peck Reservoir, supports a warm water fishery. Sauger, shovelnose sturgeon, channel catfish and walleye are the common game fish found in the reach. A major paddlefish snagging fishery exists in the lower 40-mile reach of the middle Missouri River during the spring. There is currently a harvest cap of 500 fish on this paddlefish population, but in 2011 it was estimated about 600 paddlefish were harvested during 14,000 angler days. Future management efforts will be designed to reduce chances of overharvest and maintain a self-sustaining population. FWP's management of paddlefish is discussed in more detail in the special management issues section of this drainage. Several tributaries with prairie fish assemblages, such as Armells Creek (81 miles long), Cow Creek and Eagle Creek, enter in this reach.

In the Judith River drainage, brown trout are the predominant game fish found throughout the reach from the confluence of the South and Middle Forks to Big Spring Creek, followed by mountain whitefish and rainbow trout. A population of brook trout exists in the upper portion of the reach where several springs originate and flow into the river. Non-game species include mountain, white and longnose suckers, longnose dace and Rocky Mountain sculpin. The Judith River receives a moderate amount of fishing pressure in this reach.

The reach of the Judith River from the mouth of Big Spring Creek to the Missouri is primarily a warm water fishery where sauger and channel catfish are the most abundant game fish. Cold water game fish, including rainbow and brown trout and mountain whitefish, also inhabit this reach seasonally but occur in low numbers during the summer. Twelve non-game species have been found in the Judith River. They include goldeye, carp, western silvery minnow, flathead chub, longnose dace, stonecat, longnose sucker, mountain sucker, and shorthead redhorse all of which are common. Uncommon species present include white sucker, river carpsucker and Rocky Mountain sculpins. In addition, blue suckers migrate into this reach to spawn. The lower Judith River has a diverse fishery, which reflects the variety of habitat conditions present and the transition from a coldwater to a warmwater environment. The lower Judith River receives only a light amount of fishing pressure, most likely due to its remote and fairly inaccessible location.

Rainbow trout are the most abundant game fish in the lower reaches of the South Fork Judith River. Westslope cutthroat trout are more abundant in the headwaters and upper tributaries. Low numbers of brook trout are found throughout the South Fork. Sculpin and mountain whitefish are common in the lower end above a dry reach. This stream receives substantial fishing pressure for its size. In the Lost Fork Judith River, brook trout are the predominant game fish, followed by rainbow and westslope cutthroat trout hybrids. Rocky Mountain sculpin are found throughout the stream's length. The Lost Fork receives light fishing pressure because of its remote location. Rainbow trout are the most abundant game fish found throughout the Middle Fork Judith River. They are the dominant species found in the canyon area, but are less numerous near the mouth. Brook trout are fairly abundant in the headwater streams and become fairly abundant again near the mouth. Other species present include cutthroat x rainbow hybrids, brown trout and sculpins. The Middle Fork receives a moderate amount of fishing pressure considering its remote location. Yogo Creek, a tributary to the Middle Fork is a popular brook trout and hybrid rainbow trout fishery. It has many dispersed camping sites and a dense rainbow trout and brook trout population.

Big Spring Creek is exceptionally productive, and for its size, is rated as one of Montana's finest fishing waters. The creek is considered the most important trout stream in central Montana. Rainbow and brown trout are the major game species in this reach. Until the last five years, rainbow trout made up the majority of the population, but recently brown trout have been about 50% of the population downstream of Lewistown. Mountain whitefish are also present, along with a few brook trout. Northern pike and walleye are occasionally found. Nongame fish species found in this reach include Rocky Mountain sculpin, longnose dace, longnose sucker, white sucker, mountain sucker, shorthead redhorse, carp and lake chub. Big Spring Creek receives a substantial amount of angler use. The 1982-2009 mail survey of Montana anglers estimated there was an average of 9,833 angler days of use per year on the creek. The majority of use is by bank fishermen; however, Big Spring Creek does receive a considerable amount of floating use. Most floating activity is related to swimming, canoeing, duck hunting, and bird watching. Cottonwood Creek is the main tributary to Big Spring Creek. The fisheries in Cottonwood Creek transition from westslope cutthroat trout in the headwaters to brook trout in the foothills and rainbow and brown trout toward the confluence with Big Spring Creek.

Rainbow trout are the most abundant game fish found in Warm Springs Creek. Water temperatures appear to be above the tolerance levels for rainbow trout spawning, so the population is one of the few streams maintained by stocking. Smallmouth bass were introduced during 1973 and annual stocking has continued. Brown trout and sauger are generally found in low numbers. Other species occurring in Warm Springs Creek include brook trout, channel catfish, common carp, and longnose, white and mountain suckers, shorthead redhorse, longnose dace, fathead minnow, goldeye, yellow perch and Rocky Mountain sculpin. The riparian and aquatic habitats are generally in good condition in the upper portion of the reach. However, poor agricultural practices, including overgrazing by livestock, have caused excessive bank erosion and increased siltation of the stream channel in some channel reaches.

The Arrow Creek drainage contains a warmwater fishery in its lower reaches that includes goldeye, channel catfish, stonecat, and northern redbelly x finescale dace hybrid. In its headwaters, brook, and westslope cutthroat trout are present. There are approximately 47 miles of suitable habitat for salmonids. Probably 43 of these miles are inhabited by brook trout, and 4 miles by westslope cutthroat trout.

## **HABITAT**

Present-day flow regimens of the Missouri River in the reach from Morony Dam to the mouth of the Marias are not natural because of regulation and storage at several upstream dams. Flow is largely controlled by Canyon Ferry Reservoir. There are five hydroelectric dams within the Great Falls area that are operated by the PPL Montana. These dams do not typically affect streamflows because the FERC order that licenses the operation of the dams, stipulates that Morony Dam is to be operated to maintain uniform flows downstream. Long-term flow records are available for two USGS gage sites within this reach. For the gage site at the head of the reach below Morony Dam, the average annual flow for a 54-year period of record (1957-2011) was 7,395 cfs. Mean monthly flows ranged from 5,520 cfs in September to 13,800 cfs in June. The average annual flow for a 121-year period of record (1891-2011) at the Fort Benton gage site was 7,608 cfs. Mean monthly flows range from 4,890 cfs in September to 18,200 cfs in June.

In the second reach from the confluence of the Marias River to the confluence of the Judith River, the Marias River discharge augments the Missouri River flows by about 10% during most of the year. Present day flow regimens in this reach are similar to the reach upstream of the Marias. The Marias does not greatly increase spring flows in the Missouri because of flood control and regulation by Tiber Reservoir. However, it may be useful in the future to restore a more natural flow regime to the Missouri River. Long-term flow records are available for the USGS Virgelle gage station located 18 miles below the confluence of the Marias River. The average annual flow for a 76-year period of record (1936-2011) was 8,320 cfs. Mean monthly flows ranged from 5,830 cfs in September to 17,800 cfs in June.

In the lowest reach from the confluence of the Judith River to the headwaters of Fort Peck Reservoir, the Judith River augments the Missouri River by about 5% throughout most of the year. Present-day flow regimens of the Missouri River are similar to the upstream reach and are regulated by upstream reservoirs. Long-term flow records are available for the Fred Robinson Bridge USGS gaging station located 23 miles above Fort Peck Reservoir. The average annual flow for a 77-year period of record (1935-2011) was 8,988 cfs. Mean monthly flows range from 6,180 cfs in September to 19,400 cfs in June.

## **FISHING ACCESS**

Adequate access has been developed at most accessible locations on the Middle Missouri Wild and Scenic River reach. About 80% of the Missouri River in this reach lies within the Upper Missouri River Breaks National Monument and the Charles M. Russell National Wildlife Refuge. The river is also classified as a Wild and Scenic, and there are motorboat use restrictions on some segments from June 15 – September 15. Recreational access is limited in the area, with only 8 boat ramps throughout the reach located at Widow Coulee (river mile 2102), Carter Ferry (river mile 2089), Fort Benton (river mile 2073), Loma (river mile 2053), Coal Banks (river mile 2032), Judith Landing (river mile 1982), Robinson Bridge (river mile 1921) and Rock Creek (river mile 1907). The reach of the Missouri River from Great Falls to the mouth of the Marias River includes the upper 21 miles of the Upper Missouri National Wild and Scenic River, which begins midway in the reach at Fort Benton. From this point, the Missouri receives heavy recreational use even though there are few access points. Access to the river is limited because of the rugged terrain and lack of development within the narrow river corridor. Public access points include a ferry crossing with adjacent FAS primitive boat ramp, a campground with a boat ramp, and a bridge crossing plus the Morony Dam area, and the Fort Benton town site.

From the confluence of the Marias to the confluence of the Judith River, the entire reach is within the Upper Missouri National Wild and Scenic River corridor, and most is within the Upper Missouri River Breaks National Monument. Nearly half of the use in this reach is recreational boating. Other activities include fishing, hunting, picnicking, camping and trapping. About 40% of the river is bordered by BLM land. The greater portion of public land is located in the lower 30 miles of the reach. Most of the public land is difficult to reach, other than by floating because of the rugged terrain and lack of development within the narrow river corridor. There is one ferry crossing, a bridge and two campgrounds where the public can access the river.

From the confluence of the Judith River to Fort Peck Reservoir, 62 miles of this reach are within the Upper Missouri National Wild and Scenic River. This portion of the Missouri includes the rugged breaks country. There is considerable recreational use in this portion of the Missouri

because of its nationally renowned beauty and wilderness qualities, fishing and hunting opportunities. The upper portion of this reach is within the Upper Missouri River Breaks National Monument, and the lower 23 miles of the reach is surrounded by the Charles M. Russell National Wildlife Refuge. Nearly the entire river in this reach is bordered by land administered by the BLM or USFWS. Most of the reach is difficult to access, other than by floating, because of the rugged terrain and large areas of roadless country. Access is limited to three bridge or ferry crossings. Only a few vehicle trails lead down to the river, with most of these being located in the lower 23 miles of river.

The Judith River is a popular recreation area for fishing, hunting, picnicking, camping, hiking and floating. The headwaters of the Judith and its tributary drainages are generally on USFS lands and have sufficient public access. A considerable portion of the forested land in the upper basin is managed for semi-primitive recreation. Access to the Judith River varies along its course. The first 25 miles is paralleled by a county road with several bridge crossings. For the next 45 miles there are only a few roads near the floodplain, but several county roads and highways cross the river at bridges. The remaining 60 miles flow through remote badlands where there are only two access points, including at the confluence with the Missouri. Most of the land adjacent to the stream is privately owned, but access is generally allowed with permission. Additional access is needed on the Judith River downstream of the South and Middle forks, on Warm Springs Creek, and Big Spring Creek downstream of Cottonwood Creek. FWP already has eight FASs on Big Spring Creek, but the additional access needs are due to it being a stream that is most easily accessed from the bank, rather than boat.

### **SPECIAL MANAGEMENT ISSUES**

FWP has worked closely with numerous partners in the Arrow, Judith and Mid Missouri drainages to help preserve and restore the unique native and wild fisheries available in these systems. Recent partners have included the PPL Montana, Montana State University, University of Idaho, BOR, and Western Area Power Administration, and the USFS. Projects have included assisting with pallid sturgeon restoration, paddlefish population research, and research on other native riverine species. An ongoing effort in cooperation with USFS has successfully increased and restored pure westslope cutthroat trout into the headwaters of several streams in the Judith, Arrow and Highwood drainages. Additional work is needed.

An additional USGS gaging station in the Judith near Utica (historic site) or near Hobson would allow better monitoring of drought conditions and instream flows in this drainage. The entire Judith drainage currently has only one USGS gaging station.

A particularly important issue in this drainage involves paddlefish management. Paddlefish anglers have seen several changes to the regulations and season structure since 2006. The current paddlefish season runs from May 1<sup>st</sup> to June 15<sup>th</sup> and the harvest of paddlefish closes once the estimated harvest reaches the cap of 500 paddlefish. Anglers are allowed to snag and release paddlefish throughout the season, regardless of whether or not they already harvested a paddlefish. The 500-fish harvest cap has been met or exceeded in all but one year (2008) since its implementation in 2008. Furthermore, the date in which the harvest of paddlefish closed has occurred earlier each consecutive year thereafter. In 2009 the harvest cap was reached on May 22<sup>nd</sup>, in 2010 it was reached on May 16<sup>th</sup>, in 2011 and 2012 the harvest cap was reached on May 14<sup>th</sup> and May 10<sup>th</sup>, respectively. The current paddlefish season structure has put more pressure on

paddlefish anglers to get to the river early enough to have a chance at harvesting a fish before the season closes. Anglers have voiced their concerns over the crowding issues created and difficulty in planning a fishing trip under the current season structure. FWP will continue to evaluate and modify the paddlefish season structure with regard to paddlefish management and concerns expressed by paddlefish anglers.

FWP will also continue to tag adults in the spring to track movement, growth, and estimate population size. Young-of-year transects will be conducted in late summer to estimate reproductive success as it pertains to spring flows on the Missouri River and Fort Peck Reservoir water elevations (rearing habitat). Creel surveys will continue to be conducted during the paddlefish season on the Missouri River from river mile 1921 to 1899 (James Kipp Recreation Area and Campground to Lower Peggy's Bottom), and a phone creel survey will be conducted after the season. These measures are critical to maintain the paddlefish population at a sustainable level.

### FISHERIES MANAGEMENT DIRECTION FOR THE MISSOURI RIVER - JUDITH DRAINAGES

Water	Miles/acres	Species	Origin	Management Type	Management Direction
Missouri River – Great Falls to Confluence with the Marias River	54 miles	Sauger	Wild	Conservation/ Special Regulations	Maintain populations within historic levels and manage as a recreational fishery with limited harvest.
		Walleye, Northern pike, Freshwater drum, Smallmouth bass	Wild	General	Manage as a recreational fishery with consumptive harvest.
		Rainbow trout, Brown trout , Shovelnose sturgeon, Channel catfish	Wild	General	Maintain populations within historic levels and manage as a recreational fishery.
		Mountain whitefish	Wild	General	Maintain populations within historic levels.
		Goldeye	Wild	General	Manage as a recreational fishery with some consumptive harvest.
		Blue sucker, Stonecat	Wild	Conservation	Maintain populations within historic levels.
Habitat needs and activities: Maintain stream flows of 3,700 cfs from 9/1-3/14 for maintenance of riffles, 4,887 cfs from 3/14-5/18, 11,284 cfs from 5/19-7/5 for paddlefish spawning migration, and 4,500 cfs from 7/6-8/31 for maintaining side channel habitat for forage species.					
Highwood Creek	37.6 miles	Rainbow trout, Brown trout, Brook trout	Wild	General	Maintain populations within historic levels and manage as a recreational fishery.
Habitat needs and activities: Maintain 10 cfs for instream flows to maintain aquatic habitat.					

Water	Miles/acres	Species	Origin	Management Type	Management Direction
Highwood Creek Drainage - Westslope Cutthroat Trout Genetically Unaltered Conservation Population Streams (Isolated Single Species Populations) (1 Stream)	2 miles	Westslope cutthroat trout	Wild	Conservation	Maintain or enhance populations to reduce extinction risk.
Highwood Creek Drainage - Westslope Cutthroat Trout Genetically Unaltered Conservation Population Streams (Isolated Single Species Populations) (2 Streams)	5-7 miles	Westslope cutthroat trout	Wild	Conservation	Continue work to establish two new populations of 100% genetically unaltered WCT populations to reduce extinction risk.
Shonkin Creek	52 miles	Brook trout	Wild	General	Manage as a recreational fishery with consumptive harvest
Habitat needs and activities: Maintain instream flow of 7 cfs for aquatic habitat.					
Missouri River - Confluence of the Marias River to the Judith River	67 miles	Sauger	Wild	Conservation/ Special Regulations	Maintain populations within historic levels, manage as a recreational fishery with limited harvest.
		Walleye, Northern pike, Freshwater drum, Smallmouth bass	Wild	General	Manage as a recreational fishery with consumptive harvest.
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Water	Miles/acres	Species	Origin	Management Type	Management Direction
		Shovelnose sturgeon, Channel catfish	Wild	General	Maintain populations within historic levels and manage as a recreational fishery.
		Pallid sturgeon	Hatchery/Wild	Conservation	Maintain and enhance existing population levels to reduce extinction risk.
		Paddlefish	Wild	Special regulations	Maintain populations within biologically healthy levels and manage as a recreational fishery with limited harvest through a cap system.
		Burbot	Wild	General	Maintain populations within historic levels.
		Goldeye	Wild	General	Manage as a recreational fishery with some consumptive harvest.
		Blue sucker	Wild	Conservation	Maintain populations within historic levels.
Habitat needs and activities: Maintain 4,300-14,000 cfs for instream flows as indicated by the following to maintain fisheries. Maintain stream flows of 4,300 cfs from 9/1-3/14 for maintenance of riffles, 5,571 cfs from 3/14-5/18, 14,000 cfs from 5/19-7/5 for paddlefish spawning migration, and 5,400 cfs from 7/6-8/31 for maintaining side channel habitat for forage species.					
Missouri River - Confluence of the Judith River to the headwaters of Fort Peck Reservoir	85 miles	Sauger	Wild	Conservation/ Special Regulations	Manage to maintain populations within historic levels in upper reaches and provide a recreational fishery with limited harvest.
		Walleye, Freshwater drum, Smallmouth bass	Wild	General	Manage as a recreational fishery with consumptive harvest.
		Shovelnose sturgeon, Channel catfish	Wild	General	Maintain populations within historic levels and manage as a recreational fishery.
		Pallid sturgeon	Hatchery/Wild	Conservation	Maintain and enhance existing population levels to reduce extinction risk.
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Water	Miles/acres	Species	Origin	Management Type	Management Direction
		Paddlefish	Wild	Special Regulations	Maintain populations within biologically healthy levels and manage as a recreational fishery with limited harvest through a cap system.
		Burbot	Wild	General	Maintain populations within historic levels.
		Goldeye	Wild	General	Manage as a recreational fishery with some consumptive harvest.
		Stonecat	Wild	Conservation	Maintain populations within historic levels.
Habitat needs and activities: Maintain 4,700-15,302 cfs for instream flows as indicated by the following to maintain fisheries. Maintain stream flows of 4,700 cfs from 9/1-3/14 for maintenance of riffles, 7,100 cfs from 3/14-5/18, 15,302 cfs from 5/19-7/5 for paddlefish spawning migration, and 5,800 cfs from 7/6-8/31 for maintaining side channel habitat for forage species.					
Arrow Creek – Lower Reaches	64 miles	Channel catfish	Wild	General	Maintain populations within historic levels and manage as a recreational fishery.
		Goldeye	Wild	General	Manage as a recreational fishery with some consumptive harvest.
		Stonecat, Northern redbelly x finescale dace hybrid	Wild	Conservation	Maintain populations within historic levels.
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Water	Miles/acres	Species	Origin	Management Type	Management Direction
Arrow Creek Headwaters - Westslope Cutthroat Trout Genetically Unaltered Conservation Population Streams (Isolated Single Species Populations) (2 Streams)	4 miles	Westslope cutthroat trout	Wild	Conservation	Maintain or enhance populations to reduce extinction risk.
Habitat needs and activities: Examine methods to protect one population from competition or hybridization.					
Arrow Creek Headwaters - Brook trout Habitat	43 Miles	Brook trout	Wild	General	Maintain recreational fishery for consumptive harvest where they pose no threat to westslope cutthroat trout populations.
Judith River - South /Middle Fork Confluence to Big Spring Creek	58 Miles	Rainbow trout, Brown trout, Brook trout	Wild	General	Manage as a recreational fishery with harvest.
		Mountain whitefish	Wild	General	Maintain populations within historic levels.
Habitat needs and activities: Maintain 25 cfs for instream flows to maintain aquatic habitat.					
Judith River – Big Spring Creek to Mouth	71 Miles	Sauger	Wild	Conservation/ Special Regulations	Manage to maintain populations within historic levels and provide a recreational fishery with limited harvest.
		Walleye, Northern pike, Rainbow trout, Brown trout Smallmouth bass	Wild	General	Manage as a recreational fishery with consumptive harvest.
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Water	Miles/acres	Species	Origin	Management Type	Management Direction
		Channel catfish	Wild	General	Maintain populations within historic levels and manage as a recreational fishery.
		Goldeye	Wild	General	Manage as a recreational fishery with some consumptive harvest.
		Stonecat	Wild	Conservation	Maintain populations within historic levels.
		Mountain whitefish	Wild	General	Maintain populations within historic levels.
		Blue sucker	Wild	Conservation	Maintain spawning and rearing populations within historic levels.
Habitat needs and activities: Maintain 160 cfs for instream flows to maintain aquatic habitat. Improve flow monitoring and management by installing a stream flow gage station near Utica or Hobson.					
South Fork Judith River	20.6 miles	Rainbow trout, Brown trout, Brook trout	Wild	General	Manage as a recreational fishery with consumptive harvest.
		Westslope Cutthroat trout	Wild	Conservation	Maintain and secure genetically altered population from competition and continued hybridization.
		Mountain whitefish	Wild	General	Maintain populations within historic levels.
Habitat needs and activities: Maintenance of existing trout habitat by providing 3.5 cfs of instream flow.					
Lost Fork Judith River	9 miles	Rainbow trout, Brook trout	Wild	General	Manage as a recreational fishery with consumptive harvest.
Habitat needs and activities: Maintain habitat and instream flows of 14 cfs.					
Middle Fork Judith River	13.1 miles	Rainbow trout, Brook trout, Brown trout	Wild	General	Manage as a recreational fishery with consumptive harvest.
Habitat needs and activities: Maintain habitat and instream flows of 22 cfs.					

Water	Miles/acres	Species	Origin	Management Type	Management Direction
Big Spring Creek –hatchery to Cottonwood Creek	23.7 miles	Rainbow trout, Brown trout	Wild	Special Regulations	Maintain a recreational fishery with no harvest until PCB cleanup completed. Evaluate allowing harvest after completion of cleanup.
		Mountain whitefish	Wild	Special Regulations	Maintain populations within historic levels with no harvest until PCB cleanup completed. Evaluate allowing harvest after completion of cleanup.
Habitat needs and activities: Maintain habitat and instream flows of 110 cfs. Restore habitat and channel form on channelized sections. Pursue additional access for bank anglers.					
Big Spring Creek – Cottonwood Creek to Mouth	8.2 miles	Rainbow trout, Brown trout	Wild	General	Maintain a recreational fishery with consumptive harvest.
		Mountain whitefish	Wild	General	Maintain populations within historic levels.
		Sauger	Wild	Conservation/ Special Regulations	Manage to maintain populations within historic levels and provide a recreational fishery with limited harvest.
Habitat needs and activities: Maintain habitat and instream flows of 100 cfs. Pursue additional access for bank anglers.					
East Fork Big Spring Creek	24.8 miles	Rainbow trout, Brook trout, Brown trout	Wild	Special Regulations	Maintain a recreational fishery with no harvest.
		Westslope cutthroat trout	Wild	Conservation	Maintain or enhance populations to reduce extinction risk.
Habitat needs and activities: Maintain habitat and instream flows of 7.5 cfs.					
Cottonwood Creek	32 miles	Brook trout Rainbow trout Brown trout	Wild	General	Maintain a recreational fishery with consumptive harvest
		Westslope cutthroat trout	Wild	Conservation	Maintain or enhance populations to reduce extinction risk.
Habitat needs and activities: Maintain habitat and instream flow of 4.5 cfs in Cottonwood Creek.					

Water	Miles/acres	Species	Origin	Management Type	Management Direction
Beaver Creek (Tributary to Cottonwood)	13 miles	Brook trout	Wild	General	Maintain a recreational fishery with consumptive harvest.
Warm Springs Creek	28 miles	Rainbow trout	Hatchery	Put-Take	Maintain a recreational fishery with consumptive harvest with continued plants.
		Brown trout	Wild	General	Manage as a recreational fishery with consumptive harvest.
		Smallmouth bass	Hatchery	General	Manage as a recreational fishery with consumptive harvest.
		Sauger	Wild	Conservation	Maintain populations within historic levels and manage as a recreational fishery with limited harvest.
		Stonecat	Wild	Conservation	Maintain populations within historic levels.
Habitat needs and activities: Maintain habitat and instream flows of 110 cfs.					
Yogo Creek	13.7 miles	Brook trout, Rainbow trout	Wild	General	Manage as a recreational fishery with consumptive harvest to minimize potential for competition and hybridization of mixed WCT population.
		Westslope cutthroat trout	Wild	Conservation	Minimize threats to genetically altered population from competition and additional hybridization.
Habitat needs and activities: Maintain habitat and instream flows of 3 cfs.					
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Water	Miles/acres	Species	Origin	Management Type	Management Direction
Judith River Drainage - Westslope Cutthroat Trout Genetically Unaltered Conservation Population Streams (Isolated Single Species Populations) (5 Streams)	10 Miles	Westslope cutthroat trout	Wild	Conservation	Maintain or enhance populations to reduce extinction risk.
Judith River Drainage - Westslope Cutthroat Trout Genetically Altered (10 Streams) & Mixed Population (10 Streams)	54.5 Miles	Westslope cutthroat trout	Wild	Conservation	Maintain or enhance populations to reduce extinction risk. Explore options to limit non-natives in mixed populations.
Judith River Drainage - Brook Trout Streams	304 Miles	Brook trout	Wild	General	Maintain recreational fishery for consumptive harvest where they pose no threat to westslope cutthroat trout populations.
Ackley Lake	226 Acres	Rainbow trout	Hatchery	Put-Grow-Take	Maintain recreational fishery for consumptive harvest by continued stocking.
Habitat needs and activities: Work with water users to maintain minimum pool elevation.					
East Fork Reservoir       Continued on next page	90 acres	Yellow perch	Wild	General	Maintain recreational fishery for consumptive harvest.
		Northern pike	Wild	Suppression	Maintain recreational fishery for consumptive harvest.
		Largemouth bass	Hatchery	General	Develop recreational fishery for consumptive harvest by stocking.

Water	Miles/acres	Species	Origin	Management Type	Management Direction
		Rainbow trout	Hatchery	General	Develop recreation fishery for consumptive harvest if low levels of wild fish present.
Habitat needs and activities: Work with City of Lewistown and NRCS to explore opportunities to use stored water to meet instream flows of Big Spring Creek during time of drought.					
Lower & Upper Carter Ponds	57 acres	Rainbow trout	Hatchery	Put-Grow-Take	Maintain recreational fishery for larger sized fish and consumptive harvest by continued stocking.
Big Casino Creek Reservoir	16 acres	Rainbow trout	Hatchery	Put-Take	Maintain recreational fishery for larger sized fish and consumptive harvest by continued stocking.
		Yellow Perch	Wild	Suppression	Encourage harvest to control numbers. Evaluate using a predator to manage numbers.
Rhoda Lake	3 acres	Westslope cutthroat trout	Hatchery	Put-Grow-Take	Maintain native species (WCT or Arctic grayling) recreational fishery for consumptive harvest by continued stocking.
Cow Creek-Headwaters to Cow Creek Reservoir	8 miles	Brook trout	Wild	General	Protect habitat and provide fish passage when applicable.
Cow Creek Reservoir	82 acres	Brook trout, Yellow perch, Black crappie	Wild/Hatchery	General/Put-Grow-Take	Continue to monitor populations and stock when necessary.
		Tiger muskie	Hatchery	Quality	Manage tiger muskie for trophy fishery (fish > 40 inches).
		Channel catfish	Wild/Hatchery	Put-Grow-Take	Evaluate channel catfish population and supplement with stocking as needed.
		Walleye	Hatchery	Put-Grow-Take	Stock 5,000 walleye fingerling on alternate years.
Habitat needs and activities: Work with Sand Creek Ranch to repair dam and implement reservoir operations plan that benefits fish production. Maintain instream flow of 4.5 cfs in Cow Creek above reservoir to protect fish habitat.					
Cow Creek-Cow Creek Reservoir Tailwaters to Confluence with Missouri River	46 miles	Native non-game fishes	Wild	Conservation	Protect habitat and provide fish passage when applicable.

Water	Miles/acres	Species	Origin	Management Type	Management Direction
Habitat needs and activities: Identify habitat issues and work closely with local conservation districts, county road crews, and landowners to implement safe water crossings which emphasis fish passage and water connectivity.					
Private & Public Ponds	-	Trout, Warm water species	Hatchery/Wild	Put-Take/General	Maintain existing pond fisheries available to the public for harvest.
Habitat needs and activities: Enhance structure in ponds when possible.					

